



Figure 1A

SEQ ID NO:1

Neisseria meningitidis BASB082 polynucleotide sequence from strain ATCC 13090

ATGGCACAACTACACTCAAACCCATTGTTTATCAATTCTTTAATCAACACACCCCTC
CTCGCCCAAGCGCATGAAACTGAGCAATCGGTGGGCTTGGAAACGGTTACCGTCGTCGGC
AAAAGCCGTCCGCGCGCCACATCAGGGCTGCTGCACACTTCGACCGCCTCCGACAAAATC
ATCAGCGGCGACACCTTGGCAGAAAAAGCCGTCAACTTGGGCGATGCTTTGGACGGCGTG
CCGGGCATTACGCCTCGCAATACGGCGGGCGGCGCTCCGCTCCCGTTATTTCGCGGTCAA
ACAGGCAGACGGATTAAAGTATTGAACCATCACGGCGAAACAGGCGATATGGCGGATTTT
TCGCCCCGATCACGCCATTATGGTAGATACCGCCTTGTCGCAACAGGTCGAAATCCTGCGC
GGGCGGTTACGCTCTTGACAGCTCGGGCAATGTGGCGGGGCTGGTCGATGTTGCCGAT
GGCAAAATCCCCGAAAAAATGCCTGAAAACGGCGTATCGGGCGAACTCGGATTGCGTTTG
AGCAGCGGCAATCTGGA AAAACTCACGTCCGGCGGCATCAATATCGGTTTGGGCAAAAAC
TTTGTATTGCACACGGAAGGGCTGTACCGCAAATCGGGGGATTACGCCGTACCGCGTTAC
CGCAATCTGAAACGCCTGCCCCGACAGCCACGCCGATTTCGCAAACGGGCAGCATCGGGCT
GTCTTGGGTTGGCGAAAAAGGTTTTATCGGCGTACGTACAGCGACCGTCGCGACCAATAT
GGTCTGCCTGCCCACAGCCACGAATACGATGATTGCCACGCCGACATCATCTGGCAAAAG
AGCTTGATTAACAAACGCTATTTACAGCTTTATCCGCACCTGTTGACCGAAGAAGACGTC
GATTACGACAATCCGGGCTTGAGCTGCGGCTTCCACGACGACGATGATGCACACGCCCAT
GCCCCAACGGCAAACTTGGATAGACCTGCGCAACAAACGCTACGAACCTCCGCGCCGAA
TGGAAGCAGCCATTCCCCGGTTTTGAAGCCCTGCGCGTACACCTGAACCGCAACGACTAC
CACCACGACGAAAAAGCAGGCGATGCAGTCGAAAACTTTTTTAACAACCAAAACGCAAAAC
GCCCCGATCGAGTTGCGCCACCAACCCATAGGCCGTCTGAAAGGCAGCTGGGGCGTGCAA
TATTTGGGACAAAATCCAGTGCTTTATCTGCCACATCCGAAGCGGTCAAACAACCGATG
CTGCTTGACAATAAAGTGCAACATTACAGCTTTTTCGGTGTAGAACAGGCAAACTGGGAC
AACTTCACGCTTGAAGGCGGCGTACGCGTGGA AAAACAAAAGCCTCCATCCGCTACGAC
AAAGCATTGATTGATCGGGAAAACTACTACAAGCAGCCCTGCCCGACCTCGGCGCGCAC
CGCCAAACCGCCCGCTCGTTTCGCACTTTCGGGCAACTGGTATTTACGCCGCAACACAAA
CTCAGCCTGACCGCCTCCCATCAGGAACGCCTGCCGTCAACGCAAGAGCTGTACGCACAC
GGCAAAACAGTTGCCACCAACACTTTTGAAGTCGGCAACAAACACCTGAACAAAGAGCGT
TCCAACAACATCGAACTCGCGTTGGGCTACGAAGGCGACCGCTGGCAATACAATCTGGCA
CTCTACCGCAACCGCTTCGGCAACTACATTTACGCCCAAACCTTAAACGACGGACGCGGC
CCCAAATCCATCGAAGACGACAGCGAAATGAAGCTCGTGCGCTACAACCAATCCGGTGCG
GACTTCTACGGCGCGGAAGGCGAAATCTACTTCAAACCGACACCGCGCTACCGCATCGGC
GTTTCCGGCGACTATGTACGAGGCCGTCTGAAAACCTGCCGTCCCTACCCGGCAGGGAA
GATGCCTACGGCAACCGTCCTTTCATCGCGCAGGACGACCAAAACGCCCTCGCGTTCCG
GCTGCGCGCCTCGGCTTCCACCTGAAAGCCTCGCTGACCGACCGCATCGATGCCAATTTG
GACTACTACCGCGTGTTTGCCCAAAACAACTCGCCCGCTACGAAACGCGCACGCCCGGA
CACCATATGCTCAACCTCGGCGCAAACCTACCGCCGCAATACGCGCTATGGCGAGTGGAAT
TGGTACGTCAAAGCCGACAACCTGCTCAACCAATCCGTTTACGCCACAGCAGCTTCCTC
TCTGATACGCCACAAATGGGCGCAGCTTTACCGGTGGCGTAAACGTGAAGTTTTAA



Figure 1B

SEQ ID NO:2

Neisseria meningitidis BASB082 polypeptide sequence deduced from the polynucleotide sequence of SEQ ID NO:1

MAQTTLKPIVLSILLINTPLLAQAHETEQSVGLETVTVVGKSRPRATSGLLHTSTASDKI
ISGDTLRQKAVNLGDALDGVPGIHASQYGGGASAPVIRGQTGRRIKVLNHHGETGDMADF
SPDHAIMVDTALSQQVEILRGPVTLLYSSGNVAGLVDVADGKIPEKMPENGVSSELGLRL
SSGNLEKLTSGGINIGLGKNFVLHTEGLYRKSGDYAVPRYRNKRLPDSPRRFANGQHRA
VLGWRKRFRYRRTYSDRRDQYGLPAHSHEYDDCHADI IWQKSLINKRYLQLYPHLLTEEDV
DYDNPGLSCGFHDDDDAHAAHNGKPWIDLNRNKRYELRAEWKQPFPGFEALRVHLNRNDY
HHDEKAGDAVENFFNNQTQNARIELRHQPIGRLKGSWGVQYLGQKSSALSATSEAVKQPM
LLDNKVQHYSFFGVEQANWDNFTLEGGVRVEKQKASIRYDKALIDRENYYKQPLPDLGAH
RQTARSFALSGNWFYFTPQHKLSLTASHQERLPSTQELYAHGKHVATNTFEVGNKHLNKR
SNNIELALGYEGDRWQYNLALYRNRFNGYIYAQTLNDGRGPKSIEDDSEMKLVRYNQSGA
DFYGAEGEIFYFKPTPRYRIGVSGDYVRGRLKNLPSLPGREDAYGNRPFIAQDDQNAPRVP
AARLGPHLKASLTDRIDANLDYYRVFAQNKLARYETRTPGHHMLNLGANYRRNTRYGEWN
WYVKADNLLNQSVYAHSSFLSDTPQMGRSFTGGVNVKF



Figure 1C

SEQ ID NO:3

Neisseria meningitidis BASB083 polynucleotide sequence from strain ATCC 13090

ATGAAAATATCATTTTCATTTAGCTTTATTACCCACGCTGATTATTGCTTCCCTCCCTGTT
GCTGCCGCCGATACGCAGGACAATGGTGAACATTACACGCCACGCTACCTACCGTTTCC
GTGGTCGGACAGTCCGACACCAGCGTACTCAAAGGCTACATCAACTACGACGAAGCCGCC
GTTACCCGCAACGGACAGCTCATCAAAGAAACGCCGCAAACCATCGATACGCTCAATATC
CAGAAAAACAAAAATTACGGTACGAACGATTTGAGTTCCATCCTCGAAGGCAATGCCGGC
ATCGACGCTGCCTACGATATGCGCGGCGAAAGCATTTCCTGCGCGGTTCCTAAGCCGAT
GCATCCGATATTTACCGCGACGGCGTGCGCGAAAGCGGACAAGTGCGCCGACGACTGCC
AACATCGAGCGCGTGGAATCCTGAAAGGCCCGTCTTCCGTGCTTTACGGCCGCACCAAC
GGCGGGCGCGTCATCAACATGGTCAGCAAATACGCCAACTTCAAACAAAGCCGCAACATC
GGTGCGGTTTACGGTTTCGTGGGCAAACCGCAGCCTGAATATGGACATTAACGAAGTGCTG
AACAAAAACGTCGCCATCCGTCTCACC GGCGAAGTCGGGCGCGCAATTTCGTTCCGCGAGC
GGCATAGACAGCAAAAAATGTCATGGTTTACCCAGCATTACCGTCAAACCTCGACAACGGC
TTGAAATGGACGGGGCAATACACCTACGACAATGTGGAGCGCACGCCGACCGCAGTCCG
ACCAAGTCCGTGTACGACCGCTTCGGACTGCCTTACCGCATGGGGTTCGCCACCGGAAC
GATTTTGTCAAAGACAAGCTGCAAGTTTGGCGTTCCGACCTTGAATACGCCCTTCAACGAC
AAATGGCGTGCCCAATGGCAGCTCGCCACCGCACGGCGGCGCAGGATTTTGATCATTTTC
TATGCAGGCAGCGAAAAATGGCAACTTAATCAAACGTAACCTACGCTTGGCAGCAGACCGAC
AACAAAACCTGTGCTCCAACCTTACGCTCAACGGCGACTACACCATCGGCCGTTTGTAA
AACCACCTGACCGTAGGCATGGATTACAGCCGCGAACACCGCAACCCGACATGGGGTTTC
AGACGCAACTTTACCGCCTCCATCGATCCATACGACCGCGCAAGCAGGCCGGCTTCGGGC
AGATTGCAGCGTATTCTGGCCCAAGACCGGCACAAAGCCGACTCCTACGGCATCTTCGTG
CAAAACATCTTCTCCGCCACGCCCGATTTGAAATTCGTCTCCTCGGCGGTCTGTTACGACAAG
TACACCTTTAATTCCGAAAACAACTCACC GGCGAGCAGCCGCCAGTACAGCGGACACTCG
TTCAGCCCCAACATCGGTGCAGTGTGGAACATCAATCCCGTCCACACACTTTACGCCTCG
TATAACAAAGCGTTTCGCGCCTTATGGCGGACGCGGCGGCTATTTGAGCATCAACACGTCG
TCTTCCGCCGTGTTCAACGCCGACCCCGAGTACACCGCCAATACGAAACCGGCGTCAAA
AGCAGTTGGCTGGACGACCGCCTCAGCACCACATTGTCCGCCTACCAATCGAACGCTTC
AATATCCGCTACCGCCCCGACGAGCAAAATGATCCTTACACTTGGGCAGTCGGCGGTAA
ACCGTTTCGCGCGCGCTGGAATTGTCCGCCATCGGGCAAATCATCCCCAAAAAACTCTAT
CTGCGCGGTTTCGTTGGGCGTGATGCAGGCGAAAGTCGTTGAAGACAAAAAAATCCCGAC
CGAGTGGGCATCCATTTGAATAATACCAGCAACGTTACCGGCAACCTGTTTTCGTTAT
ACACCGACCGAAAACCTCTACGGCGAAATCGGCGTAACCGGTACAGGCAAACGCTACGGT
TACAACCTAAGAAATAAAGAAGTGACTACGCTTCCAGGCTTTGCCCGAGTTGATGCCATG
CTCGGCTGGAACCATAAAAATGTTAACGTTACCTTTGCCGCGAGCAATCTGTTCAATCAA
AAATATTGGCGTTTCGGACTCTATGCCGGGTAATCCGCGCGGCTATACTGCCCGGGTAAAT
TACCGTTTCTGA

SEQ ID NO:4

Neisseria meningitidis BASB083 polypeptide sequence deduced from the polynucleotide sequence of SEQ ID NO:3

MKISFHLALLPTLI IASFPVAAADTQDNGEHYTATLPTVSVVGQSDTSVLKGYINYDEAA
VTRNGQLIKETPQTIDTLNIQKNKNYGTNDLSSILEGNAGIDAAYDMRGESIFLRGFQAD
ASDIYRDGVRESGQVRRSTANIERVEILKGPSSVLYGRNTGGGVINMVSKEYANFKQSRNI
GAVYGSWANRSLNMDINEVLNKNVAIRLTGEVGRANSFRSGIDSKNVMVSPSITVKLDNG
LKWTGQYTYDNVERTPDRSPTKSVYDRFGLPYRMGFHRNDFVKDKLQVWRSDLEYAFND
KWRAQWQLAHRATAQDFDHFYAGSENGNLIKRNYAQQTDNKTLSSNFTLNGDYITIGRFE
NHLTVGMDYSREHRNPTLGFRNFTASIDPYDRASRPASGRLQRILAQDRHKADSYGIFV
QNIFSATPDLKFLVGGRYDKYTFNSENKLTGSSRQYSGHSFSPNIGAVWNINPVHTLYAS
YNKAFAPYGGRGYLSINTSSSAVFNADPEYTRQYETGVKSSWLDRLSTLSAYQIERF
NIRYRPDEQNDPYTWAVGGKHSRGVELSAIGQIIPKKLYLRGSLGVMQAKVVEDKKNPD
RVGIHLNNTSNVTGNLFFRYTPTENLYGEIGVTGTGKRYGYNSRNKEVTTLPGFARVDAM
LGWNHKNVNVTFAAANLNFQKYWRSDSMPGNPRGYTARVNYRF



Figure 1D

SEQ ID NO:5

Neisseria meningitidis BASB091 polynucleotide sequence from strain ATCC 13090

GTGAACAAAACCTCATCCTCGCCCTTTCCGCCCTCCTCGGCCCTTGCCGCGTGCAGTGCC
GAACGCGCCTCGCTGTACCCCTCATACAAGCTCAAAGTCATACAGGGCAACGAAATCGAC
CCCCGCGCCGCGCCGCACTCCGCCTCGGTATGACCAAAGACCAAGTCCTGCTCCTGCTC
GGCAGCCCCCTGTTGCGCGACGCGTTCCACACCGAACGCTGGGACTATACCTTCAACACC
TCCCGCAACGGCATCATCAAAGAACGCAGCAATCTGACCGTCTATTTTGAAAACGGCGTA
CTCGTCCGCACCGAAGGCGACGTCCTGCAAAACGCTGCCGAAGCGCTCAAAGACCGCCAG
AACACAGACAAACCATAA

SEQ ID NO:6

Neisseria meningitidis BASB091 polypeptide sequence deduced from the polynucleotide sequence of SEQ ID NO:5

MNKTLLILALSALLGLAACSAERASLYPSYKLKVIQNEIDPRAAALRLGMTKDQVLLLL
GSPLLRDAFHTRWDYTFNTSRNGIIKERSNLTVYFENGVLVRTEGDVQLQAAEALKDRQ
NTDKP

SEQ ID NO:7

Neisseria meningitidis BASB092 polynucleotide sequence from strain ATCC 13090

ATGAAAACCTTCTTCAAAACCCCTTCCGCCGCCGCACTCGCGCTCATCCTCGCCGCCTGC
GGCGGTCAAAAAGACAGCGCGCCCGCATCCGCTTCTGCCGCCGCCGACAACGGCGCG
GAGAAAAAAGAAATCGTCTTCGGCACGACCGTCGGCGACTTCGGCGATATGGTCAAAGAA
CAAATCCAAGCCGAGCTGGAGAAAAAAGGCTACACCGTCAAACCTGGTCGAGTTTACCGAC
TATGTACGCCCCGAATCTGGCATTTGGCTGAGGGCGAGTTGGACATCAACGTCTTCCAACAC
AAACCCATCTTTGACGACTTCAAAAAGAACACAATCTGGACATCACCGAAGTCTTCCAA
GTGCCGACCGCGCCTTTGGGACTGTACCCGGGCAAGCTGAAATCGCTGGAAGAAGTCAAA
GACGGCAGCACCGTATCCGCGCCCAACGACCCGTCCAACCTTCGCCCCGCGTCTTGGTGATG
CTCGACGAACTGGGTGGATCAAACTCAAAGACGGCATCAATCCGCTGACCGCATCCAAA
GCGGACATTGCCGAAAACCTGAAAAACATCAAAATCGTCGAGCTTGAAGCCGCGCAACTG
CCGCGTAGCCGCGCCGACGTGGATTTTGCCGTCGTCAACGGCAACTACGCCATAAGCAGC
GGCATGAAGCTGACCGAAGCCCTGTTCCAAGAACCGAGCTTTGCCTATGTCAACTGGTCT
GCCGTCAAAACCGCCGACAAAGACAGCCAATGGCTTAAAGACGTAACCGAGGCCTATAAC
TCCGACGCGTTCAAAGCCTACGCGCACAAACGCTTCGAGGGCTACAAATCCCCTGCCGCA
TGGAATGAAGGCGCAGCTAAATAA

SEQ ID NO:8

Neisseria meningitidis BASB092 polypeptide sequence deduced from the polynucleotide sequence of SEQ ID NO:7

MKTFFKTL SAAALALILAACGGQKDSAPAASASAAADNGAEKKEIVFGTTVGDFGDMVKE
QIQAELEKKGYTVKLVEFTDYVRPNLALAEGLDINVFQHKPYLDDFKKEHNLDITEVFQ
VPTAPLGLYPGKLKSL EEVKDGSTVSAPNDPSNFARVLVMLDELGWIKLKDGINPLTASK
ADIAENLKNIKIVELEAAQLPRSRADVDFAVVNGNYA I SSGMKL TEALFQEPSFAYVNWS
AVKTADKDSQWLKDVTEAYNSDAFKAYAKRFEGYKSPA AWNEGA AK



Figure 1E

SEQ ID NO:9

Neisseria meningitidis BASB101 polynucleotide sequence from strain ATCC 13090

GTGAAACCGCGTTTTTTATTGGGCAGCCTGCGCCGTCCTGCTGACCGCCTGTTTCGCCCCGAA
CCTGCCGCCGAAAAAACTGTATCCGCCGCATCCGCATCTGCCGCCACACTGACCGTGCCG
ACCGCGCGGGGCGATGCCGTTGTGCCGAAGAATCCCGAACGCGTCGCCGTGTACGACTGG
GCGGCGTTGGATACGCTGACCGAATTGGGCGTGAATGTGGGCGCAACCACCGCGCCGATG
CGCGTGGATTATTTGCAGCCTGCATTTGACAAGGCGGCAACGGTGGGGACGCTGTTTCGAG
CCCGATTACGAAGCCCTGCACCGCTACAATCCTCAGCTTGTCATTACCGGCGGGCCGGGC
GCGGAAGCGTATGAACAGTTGGCGAAAAACGCGACCACCATAGATCTGACGGTGGACAAC
GGCAATATCCGCACCAGCGGCGAAAAAGCAGATGGAGACCTTGGCGCGGATTTTCGGCAAG
GAAGCGCGCGCGCGGGAATTGAAGGCGCAGATTGACGCGCTGTTTCGCCCAAACGCGCGAA
GCCGCCAAAGGCAAAGGACGCGGCTGGTGCTGTCGGTTACGGGCAACAAGGTGTCCGCC
TTCGGCACGCAGTCGCGGTTGGCAAGTTGGATACACGGCGACATCGGCCTACCGCCTGTA
GACGAATCTTTACGCAACGAGGGGACGCGGACGCTGTTTCCTTCGAATACATCAAAGAG
AAAAACCCCGATTGGATTTTCATCATCGACCGTACCGCCGCCATCGGGCAGGAAGGGCCG
GCGGCTGTCTGAAGTATTGGATAACGCGCTGGTACGCGGCACGAACGCTTGGAAGCGCAAG
CAAATCATCGTCATGCCTGCCGCGAACTACATTGTTCGCGGGCGGCTCGCGGCAGTTGATT
CAGGCGGCGGAGCAGTTGAAGGCGGCGTTTGAAGGCGAGAACCCGTTGCGGCGGGGAAA
GAGTAG

SEQ ID NO:10

Neisseria meningitidis BASB101 polypeptide sequence deduced from the polynucleotide sequence of SEQ ID NO:9

MKPRFYWAACAVLLTACSPEPAAEKTVSAASASAATLTVPTARGDAVVPKNPERVAVYDW
AALDTLTELGVNVGATTAPMRVDYLQPAFDKAATVGTLFEPDYEALHRYNPQLVITGGPG
AEAYEQLAKNATTIDLTVDNGNIRTSGEKQMETLARIFGKEARAAELKAQIDALFAQTRE
AAKGKGRGLVLSVTGNKVSAGFTQSRLASWIHGDIGLPPVDESLRNEGHPVVSFEYIKE
KNPDWIFIIDRTAAIGQEGPAAVEVLNLDNALVRGTNAWKRKQIIVMPAANYIVAGGSRQLI
QAAEQLKAAFEKAEPVAAGKE